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**Marketer Delivers the Old-Fashioned Way
POS Moves into Second Generation
1991 Annual Buyer's Guide**

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National Petroleum News



**Are Two Clerks
Safer Than One?**

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Region Editors
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George Chmielarz

Production Manager
Lloyd Schultz

Classified Sales
Elizabeth Santelli

Regional News Offices:

East: J. Richard Shaner, P.O. Box
1476, Morristown, NJ 07962-1476. (201)
428-2902

Midwest: Steve Dwyer, 950 Lee St.,
Des Plaines, IL 60016. (708) 296-0770

South: Angel Abcede, 950 Lee St., Des
Plaines, IL 60016. (708) 296-0770

West: Mark Emond, P.O. Box 8130,
Anaheim, CA 92812-0130. (714) 774-5598



Editor's Viewpoint

The murder of a young female C-store clerk a month ago in a Southern city should have been yet another rude awakening for proponents of an ordinance requiring two clerks on duty during late night hours. Even though advocates of the two-clerk law say they have the facts and figures to prove that two clerks on late night shifts discourage crime, opponents of the rule scoff at those statistics, pointing out that two clerks are not a proven deterrent to robberies—or worse.

The tragic, all too frequent loss of lives of on-duty clerks should send a strong signal to federal and state regulators for the need to draft security measures such as well-lit stores, clear windows, drop safes, limited cash on hand, etc., with a proven track record in deterring crime. Industry studies clearly show that these security procedures deter robberies more than the two-clerk provision. (See story on pg 30)

While there is no such thing as a failsafe safety measure against robbery or murder, these other security techniques are more appropriate than subjecting two people to a game of chance. Ironically, the young female clerk who was murdered was one of two clerks on duty during the graveyard shift. According to an industry exec, the robber had taken the money and was on the way out the door when he heard the other clerk rustling around in the back and panicked and shot and murdered the woman.

Wayland Clifton, chief of police, Gainesville, Fla., told me that since the ordinance went into effect, overall C-store robberies have sharply declined. He adds night time robberies in C-stores have declined 92%, while in the surrounding county (where the ordinance is not in place) C-store robberies are up 45%. Considering all the emphasis and publicity the police department put on combating C-store robberies, and the fact the ordinance mandated a range of other security procedures, it's little wonder why criminals targeted other establishments. If I were a crook, I'd do the same.

I realize that common sense dictates it's safer to walk late at night with a friend than walk alone, but I don't know if that holds true during a robbery with a drug-crazed addict holding a gun to a C-store clerk's head asking for twenty dollars.

The murder of a C-store clerk is a shattering experience. Undoubtedly store owners should be required to protect their employees, most of whom put their lives at risk for slightly more than minimum wage.

In addition to requiring two-clerks, the Gainesville ordinance mandates scanning, closed circuit television cameras, 500-lb. or timed opening floor safes, a \$50 limit on cash in the register, windows clear of stock and advertising stickers that might obstruct the view of a store's interior and adequate lighting throughout the parking lots, including side lots. These are sensible measures, they work better than two clerks and they should become the nucleus for industry-wide standards and rules for store security.

Jeopardizing the lives of two people is not the answer. Finding hard solutions that work is a much more sensible approach.

—Peggy Smedley

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Fannon Petroleum Services relies on the old-fashioned, customer-friendly, community-oriented approach, plus a diversified account base to maintain its position as one of the top companies in the Washington, D.C., area.

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Bonanzas Included \$1-billion for Marathon and Conoco

Fourth-quarter and full-year earnings reports made 1990 financial-page heroes out of virtually all of the majors and the top independent marketers.

There's little or no reason to believe that the sunshine and roses did not permeate the rest of the industry, showering many companies with similar bonanza-like profits.

The crisis in the Persian Gulf, which became a full-fledged war in mid-January, contributed heavily to the runup in earnings, most companies said. Some went to extraordinary lengths to explain their good fortunes, issuing news releases and commentaries, undoubtedly in anticipation of public grumbling over the size of the profit increases.

Nine oil companies, including the two biggest corporately owned independents—Marathon and Conoco—earned well over a billion dollars each in the year just ended. That's up three from the billion-dollar club listing of 1989. Collectively the nine billion-dollar frontrunners made almost \$18-billion in 1990 vis a vis \$13-billion for 1989's sextet.

Top dog Exxon came in with more than \$5-billion for the year. This wasn't too surprising—the company has made that much on several occasions in the past—but the fact that its fourth quarter was up 221% was of an eye-opener.

Marathon enhanced its image as a likely takeover target with its first billion-dollar year in history (NPN—Dec. '90, p32). It made \$1.1-billion, more than Conoco, which once before (1980) earned that much. Marathon is owned by USX Corp., the Pittsburgh, Pa., steelmaker, while Conoco is owned by DuPont Co., based in Wilmington, Del. Marathon earned five times as much as the steel subsidiary of USX, accounting for 73% of the corporation's profits.

Corporate: Fourth-Quarter and Full-Year Earnings 1990 vs. 1989

(billion dollars)

	4th Qtr. 1990	4th Qtr. 1989	% Chng.	Full Year 1990	Full Year 1989	% Chng.
Exxon	\$1,555.0	\$485.0	220.6%	\$5,010.0	\$3,510.0	42.7%
Mobil	651.0	447.0	45.6	1,928.0	1,809.0	6.6
Chevron	633.0	(883.0)	----	2,157.0	251.0	759.4
Amoco	538.0	319.0	68.7	1,913.0	1,610.0	18.8
Shell	446.0	264.0	68.9	1,036.0	1,405.0	(26.3)
Texaco	338.0	287.0	35.0	1,450.0	2,413.0	(39.9)
Arco	566.0	403.0	40.0	2,011.1	1,953.0	3.0
BP America	n/a	n/a	n/a	n/a	n/a	n/a
Phillips	237.0	(255.0)	----	779.0	219.0	255.7
Conoco	405.0	108.0	275.0	1,078.0	538.0	100.4
Unocal	38.0	(26.0)	----	401.0	260.0	54.2
Marathon *	338.0	166.0	103.6	1,138.0	987.0	15.3
Coastal	94.9	71.4	32.9	225.6	170.1	32.6
Sun	18.0	(173.0)	----	229.0	98.0	133.7
Amerada Hess	235.2	70.8	232.2	482.7	476.3	1.3
Pennzoil	29.9	(102.5)	----	93.8	103.5	(9.4)
Ashland	(10.8)	22.0	----	[1st Qtr. fiscal ends 9/30]		
Kerr-McGee	49.9	37.2	34.1	150.2	156.0	(3.7)
Murphy	18.9	20.9	(9.6)	113.9	46.6	144.4
Amer. Petrofina	19.6	13.5	45.2	125.5	119.1	5.4
Citgo	n/a	n/a	n/a	n/a	n/a	n/a
Dia. Shamrock	7.7	(23.8)	----	77.5	28.1	175.8
Total Petro.	0.3	9.6	(96.9)	42.0	48.2	(12.9)

Downstream: Fourth Quarter and Full Year—1990 vs. 1989

(million dollars)

Exxon Total	\$306	\$340	(1)	\$221	\$1,098	(80)
Domestic	(24)	114	----	98	370	(74)
Foreign	330	226	46	123	728	(83)
Mobil Total	254	101	151	619	655	(6)
Domestic	21	66	(68)	96	319	(70)
Foreign	233	35	566	523	336	56
Chevron Total	150	(271)	----	763	134	469
Domestic	---	(322)	----	376	(82)	---
Foreign	150	51	194	387	216	79
Texaco Total	(15)	(45)	----	618	460	34
Domestic	(65)	(112)	----	244	78	213
Foreign	50	67	(25)	374	382	(2)
Amoco (worldwide)	83	187	(56)	315	648	(51)
Shell	23	10	130	88	361	(76)
BP America	n/a	n/a	n/a	n/a	n/a	n/a
Arco	54	64	(16)	439	291	51
Phillips	15	(15)	----	145	176	(18)
Conoco	162	62	61	562	303	85
Sun	(15)	7	----	155	212	(27)
Marathon	69	58	19	551	405	36

* Operating income; Marathon's 1989 earnings were restated in 1990, increasing them from the originally announced \$862-million to \$987-million.

● TRENDS

Guessing Game: How High (or Low) Will Prices Go?

About a month before the first bombs fell on Iraq in mid-January, a group of financial writers, business editors and assorted oil experts, all of whom should have known better, spent 10 to 15 minutes after a jolly luncheon consulting their crystal balls and predicting where crude oil and gasoline prices would be at the "same time next year," i.e., winter 1991-92.

Obviously, no one's going to know the correct answers until next December, when the questionnaires will be reviewed and graded for accuracy. But the implications of their guessing game make for some interesting reading for the oil industry, especially gasoline and fuel oil marketers, in the meantime.

There are two or three things to keep in mind in reading this commentary: (1) The forecasts were made in a prewar atmosphere when no one was really sure whether or not the January 15, U.N. deadline was going to be a date with destiny; (2) the participants are considered sophisticated marketplace and/or oil industry evaluators; therefore, more realistic than the man-on-the-street in their outlooks; and (3) more important than the actual numbers is the range of their guess-estimates, i.e., the highs and lows in each case, war or no war.

The first question of importance to oil people: If the price of Saudi Arabian light crude was \$20.80 bbl. on Oct. 29, 1990, what will it be on Oct. 28, 1991? The forecasts: \$16.00 to \$41.50 bbl. In other words, none of the business, financial and oil savants thought that international crude prices would be near the \$8.00 bbl. bottoms of 1986, nor would they be in the \$50 to \$100 range that makes the forecast headlines from time to time.

Another question looked at crude prices from the domestic angle. Suppose, said the questionnaire, the

domestic "spot" price for West Texas intermediate crude was \$34.70 bbl. on Oct. 29, last. What will it be on Oct. 28, 1991? The experts: \$15.00 to \$44.00 bbl. That's a bit higher than the international forecast and a bit below the downside expectancy.

Similarly, if the wholesale price for unleaded, regular grade gasoline was 96.75¢ gal. in New York, what will the price be one year from then? The range: 56¢ to \$1.55 gal. Remember, these are supposed to be high/low forecasts—the extremes in the forecasts. Thus, 55¢ gal. wholesale would equate out to around 85¢ at the pump, which isn't really that scary, while \$1.55 gal. wholesale would see hose retails around \$2.00 gal., which undoubtedly would produce a lot of consumer restiveness.

Question: If the nine-month average for drilling rigs in 1990 was 971, what's the outlook for the like period of 1991? The response range: 770-1,300. That, for an industry which has seen as many as 4,000 rigs adripping in the early '80s, isn't great or optimistic news. What it is saying, in effect, is that oil imports will continue to increase in 1991 while U.S. production will continue to decline.

Looking at the financial markets, the galaxy of editors, writers and pundits said the prime interest rate would be somewhere between 7-11.5% on Oct. 28, 1991, while the interest rate of 13-week Treasury bills sold at auction would be 5-9%.

Sponsor of the luncheon—and the annual Economic Questionnaire—for the record was USX Corp., which owns and operates Marathon Oil Co. and U.S. Steel Corp.

The group suggested that USX would make out reasonably well in 1991. Noting that the closing price for USX common was 30-7/8 on Oct. 29, 1990, the clairvoyants suggested it might drop as low as 25-7/8 by Oct. 28, 1991, but on the other hand, it could jump as high as 45-1/8. That could be a healthy increase for the corporation, but should also signal that all's very, very well with Marathon, its principal moneymaker.

—By J. Richard Shaner

● MARKETPLACE AT A GLANCE

AVERAGE GASOLINE PRICES IN THE U.S. (per gal.)

	Gasoline (All types)	Leaded Regular	Unleaded Regular	Unleaded Premium
DECEMBER				
U.S. City Avg.	\$1.410	\$1.335	\$1.354	\$1.537
Regions				
Northeast	1.505	1.569	1.431	1.628
North Central	1.349	1.295	1.311	1.485
South	1.392	1.294	1.327	1.504
West	1.421	1.352	1.387	1.552

Source: U.S. Dept. of Labor, Bureau of Labor Statistics.

STOCKS (Add 000 bbl.)

	1/25/91	1/26/90
Gasoline (Total)	220,949	226,764
Gasoline (Unleaded)*	172,665	171,002
Jet Kerosine	45,135	36,742
Distillates	115,3723	119,007
Residual	49,679	47,795

*Included in gasoline total.

Source: American Petroleum Institute.

Traditional Chains Struggle Financially

Is the bell beginning to toll for the traditional convenience store companies? During the past two years, no fewer than 14 C-store chains have fled for the protection of U.S. bankruptcy courts by filing either Chapter 11 bankruptcy protection or Chapter 7 liquidation petitions.

Many more C-store chains, while not in the grip of bankruptcy, have submitted less than stellar financial performances. Those chains have been forced to sell off a number of their stores or to abandon markets where they can't compete.

The plight of today's traditional C-store companies seems to reflect a growing trend that has riddled U.S. companies in general. In 1990, more than 60,000 businesses filed for bankruptcy protection or liquidated, a 21% increase from 1989, according to Dun & Bradstreet. The combined debt of failed companies last year soared to an estimated \$65-billion, an increase of 80%.

What's the root cause of such fiscal chaos? In the C-store industry it has long been identified as intense competition from major oil companies, larger independents and aggressive marketers. Big Oil and its smaller counterparts own most of the prime locations—the corner sites in high traffic zones—and they've been busy converting those traditional stations into C-store/pumper combinations.

Besides having a lock on the prime locations, the majors and large independents are willing to spend big bucks on these locations. With their immense upstream resources and retail holdings already capitalized, the majors are much more flexible financially than the traditional C-store outfits and are more experienced in adapting to the changing marketplace.

However, in some cases, the financial

woes of the traditional C-store chains are largely unrelated to the influx of petroleum companies into the market.

Analysts say the largest chains (200 stores or more) resemble giant pachyderms: Too large and immobile to adapt to changes in the market.

Says Coney Elliott, vice president, Solutions, Inc., San Angelo, Texas: "The larger chains have allowed themselves to get into a cash crunch position so that they can't reinvest dollars back into their operations to compete in the marketplace. Thus, their property depreciates quicker and financial problems ensue."

Dick Meyer, president of C-store Systems, Bedford, Texas, offers numerous reasons for the collapse. "Companies operate without the facts after—rather than before—the trouble begins," says Meyer, who offers financial and strategic planning services to C-store and petroleum companies.

Meyer adds that the cost-cutting required during a reorganization period should be implemented long before the financial problems begin. To illustrate that cutbacks don't necessarily compromise output, Meyer says he has often seen companies "produce more with half the number of employees."

Despite the gloomy assessments, there were signs that the traditional chains might be bouncing back. Of the 14 chains in bankruptcy, two emerged late last year from Chapter 11 with ambitious reorganization plans. They include Plaid Pantry, a 107-store chain headquartered in Portland, Ore., and Convenient Food Mart, Inc., (CFMI), a 550-store chain based in Chicago. Others, such as Circle K and Southland, are still ironing out their reorganization plans.

The list of chains in trouble reads like a

veritable who's who directory of the C-store industry:

- The Southland Corp. (6,705 stores) filed for Chapter 11 in October 1990, after failing to restructure debt obligations incurred during its \$4.9-million leveraged buyout in 1987. A bankruptcy judge ordered the chain to give shareholders one more chance to vote on a reorganization plan. Recently, bond and stockholders have been asked to vote directly on the plan, says a spokeswoman for Southland. Prior to its LBO in 1987, Southland owned 8,250 stores. The number dropped to 6,920 in 1990.

- Phoenix-based Circle K (4,600 stores) filed for Chapter 11 bankruptcy protection in May 1990, after accumulating a junk bond albatross of \$1-billion, much of it frittered away on expensive and rapid store acquisitions. Beginning with about 1,000 stores in 1983, the company increased its retail network to 4,600 by 1990. Company officials say reorganization won't occur until the C-store giant gets a full year under its belt to see what kind of cash flow it can generate.

- Plaid Pantry emerged from bankruptcy in December 1990, after filing for Chapter 11 in March 1989. Chris Girard, president and CEO of the company, says a restructuring plan calls for three to five new stores a year by 1995. The company-owned and operated chain, which reported 172-stores two years ago, has been reduced to 107 stores. Girard says the firm's success hinges on putting gasoline in more new outlets. Currently, only 18 Plaid Pantry stores sell gasoline in the state of Oregon.

- Convenient Food Mart filed for bankruptcy protection in late 1989 and began reorganization in the fall of 1990. CFMI officials comment that gasoline and

deli are the operative words for the C-store chain. The company plans to unveil a new look sometime this year highlighting its fuel and deli operations, says Richard Harper, president and CEO of the firm. CFMI had 1,450 stores at its height, but has since reduced that number to 550.

- Farm Stores, a 260-store chain based in Miami, filed for bankruptcy protection in late 1990. Reorganization

(Continued on page 22)

Major oil company C-store developments

Company Name	Location	Store Name	1988 Total	1990 Total
Chevron	San Francisco	Food Marts	3,896	3,800
Unocal	Los Angeles	Self Serve Marts	2,500	1,924
Shell	Houston	Shell Food Mart	1,164	4,375*
Amoco	Chicago	Food Mart	1,000	1,500
Texaco	Houston	Food Mart	900	1,319
Arco	Los Angeles	am/pm mini-marts	782	746
Emro Marketing	Springfield, Ohio	Speedway/Checker/Starvin' Marvin	675	1,668
BP America	Cleveland	Sohio/BP/Gulf Mart	620	803
Ashland	Ashland, Ky.	SuperAmerica	500	750
Diamond Shamrock	San Antonio	Corner Store	529	677

* Includes all jobber, direct-supplied food marts and C-stores.

(Continued from page 21)

plans are sketchy at the moment. The bankruptcy was precipitated by a real estate deal that had gone sour, sources say.

● Junior Food Mart, Fordyce, Ark., an 80-store chain, filed for Chapter 11 bankruptcy protection in December 1990. Details for a reorganization plan have yet to be announced.

● Cumberland Farms, the 14-state, 1,100-store chain based in Canton, Mass., has been under heavy debt since acquiring Gulf Oil in 1989. A plan to cut the company's gasoline marketing division may occur, sources say. The company's upgrading of its Newfoundland refinery has also become a financial burden, sources say.

Traditional C-store chains since 1989 that filed for either Chapter 11 bankruptcy protection or Chapter 7 liquidation:

Company Name	Location	Store Name	# Stores
Southland Corp.	Houston	7-Eleven	7,700
Circle K	Phoenix	Circle K	6,650
Krauszer's Food Stores	Edison, N.J.	Dairy Stores	136
Majik Market Corp.	Casselberry, Fla.	Majik Market	367
Plaid Pantry	Portland, Ore.	Plaid Pantry	107
Convenient Food Mart, Inc.	Chicago	Convenient Food Mart	550
Kwik Stop	Bonville, N.Y.	Kwik Stop	60
Sami Quik Stop	Youngstown, Ohio	Sami Quik Stop	15
Crouch C-stores	Shawn, Kan.	Crouch's	4
Tyler & Simpson	Norman, Okla.	N/A	N/A
Q n'E	Austell, Ga.	Quick N' Easy	15
Micky's C-stores	Killeen, Texas	Micky's C-stores	20
Wickland Oil	Sacramento, Ca.	Regal Stations	2
JFM, Inc.	Fordyce, Ark.	Jr. Food Mart	80
Farm Stores, Inc.	Miami, Fla.	Farm Stores	260

Why the problem?

Elliott of Solutions, Inc., says larger chains have a few things going against them. He says they haven't built enough gasoline/C-store combination facilities, and that has resulted in one-sided merchandising ratios. On top of that, he says, large chains got into a bad habit of building more stores than they could possibly operate efficiently.

"Some chains are more concerned with opening more and larger stores than fine-tuning the merchandise or just reinvesting in their existing stores," says Elliott. "With so many stores to tend to, the large chains have discovered the capital outlay of such an investment to be devastating."

There are any number of reasons why C-store chains have stumbled financially. In his last analysis of the industry published in 1988, John Roscoe, publisher of the *Dollars Per Day Survey* cited debt, location, leadership and concept as core problems with Southland and its 7-Eleven stores. The 7-Eleven chain was the lowest-rated chain with pretax profits of \$64.45 store per day. Part of the problem, Roscoe points out, is that big chains such as 7-Eleven are saddled with too many low-producing secondary locations.

Roscoe says Circle K, which compounded its problems by imposing price increases at stores despite intense competition, turned from a "cost-based operation to a promoter-driven operation" and that spelled the beginning of the end.

Meanwhile, Girard says Plaid Pantry's downfall stemmed from poor management, heavy debt service and an ill-advised conversion of some outlets to mini-marts. Because of pending litigation against Arco over that conversion, Girard declined to comment on some of the specifics of the conversion. But he added: "The customers ignored our new food program in droves, and we had no gasoline sales to draw in customers." Girard says

new outlets with gasoline must do at least 60,000 gal./mo. to survive.

On the other hand, operators with 200 or fewer stores have flourished. They are now four times more profitable than operators with 200 or more stores, according to NACS's 1991 "State of the Convenience Store Industry" report that's due out this spring.

Two intermediate-size chains that Elliott says bear watching in the '90s include Huck's Convenience Stores, Carmi, Ill., and Town & Country Food Stores, San Angelo, Texas. Both chains have done a good job narrowing the gap on their gasoline-to-merchandise ratios.

Meanwhile, a few of the larger chains also appear to be pushing the right buttons, including:

● National Convenience Stores (NCS), which has 1,084 stores in four Sun Belt states. NCS improved its figures in the first three quarters of its 1990 fiscal year. Third-quarter profits were \$383,000, compared to nearly a \$7.5-million loss in 1989. Company president V.H. Van Horne attributes the turnaround to an increased emphasis on major markets and new merchandising strategy [*NPN*—Feb. '91, p15]. In addition, NCS is one of the few major traditional C-store chains that restructured its retail network along the same lines as the major oil companies, abandoning low-performing markets and concentrating its strategy in markets where it already has a strong presence.

● Casey's General Stores, Inc., a 771-store chain based in Ankeny, Iowa, reported record sales for the first quarter of its 1991 fiscal year ending July 31. Sales advanced 5.8% to a record \$141.5-million, compared to \$133.7-million for the first-quarter 1989. Casey's earned an industry high of \$77.94 store per day in pretax profit. The chain has found success by keeping costs down and picking markets where it is the only show in town.

● Uni-Marts, Inc., a 341-store chain headquartered in State College, Pa., enjoyed a 21% increase in sales for first-quarter 1991. The company saw sales jump to \$70-million from \$57.4-million in first-quarter 1990. Earnings increased 13%.

According to Kirk Gallaher, senior vice president of finance for Uni-Marts, Inc., the company went through a growth spurt in 1988 and 1989, but is now concentrating on fine-tuning its existing outlets. The company has been successful, Gallaher says, because "We're a regional chain and we have a good mix of urban and rural outlets. Where we market, the C-store saturation level is lower. Best of all, we're not bucking heads with the majors."

Marginal gains

The trials and tribulations of the traditional chains was documented in annual figures compiled by NACS. According to NACS's, convenience stores experienced marginal revenue increases overall from the previous year. The total number of members has increased from 1,353 to 1,427 and total number of stores has risen from 57,603 to 62,665 from the previous year.

According to NACS, chains with 201-500 stores have experienced the most financial duress. These chains declined from 10,304 stores to 8,702 in one year, a 16% drop.

The 1990 NACS report also indicates that pretax profits have been slipping at an uneasy rate. Overall average profits dropped to 0.4% from 1.9% the year before. Again, the report bears out that large C-store companies are ailing the most. Chains with 201-500 stores saw profits decline from 2.7% in 1988 to a loss of 0.4% in 1989. In addition, C-store firms with 500-or-more stores dropped from an average profit of 1.8% in '88 to a loss of 1.1% in '89.

—Steve Dwyer

Arco Says Its New Gasolines May Be as Clean as Methanol

Atlantic Richfield announced it has developed four reformulated gasolines that may be able to match air-quality benefits of M85 (85% methanol, 15% gasoline), a cleaner-burning alternative motor fuel adopted by many environmental agencies as a standard for comparison.

An independent laboratory will test the new formulas by the end of May to "determine the least costly formulations" that can achieve M85 cleanliness. The test fleet consists of 10 1990 model cars and is similar in makeup to the fleet tested in the Auto/Oil Research Program [NPN—Feb. '91, p23].

"This test phase represents our commitment to expand EC fuels to all our grades of gasoline," says George H. Babikian, president of Arco Products Co. "Making the fuel available in large quantities, however, will require about \$3-billion in refinery modifications over the next four to five years."

An Arco announcement said these tests should be the "final proof" of the company's preliminary conclusions that it can make an M85-equivalent gasoline costing about 15¢ gal. more than conventional gasoline, compared with its estimate of 25-40¢ gal. more for an equivalent amount of M85 (see table).

Arco said its new formulations should test "significantly better" than any gasoline tested in the auto/oil effort because the concentrations of polluting components are equal to or less than those of any gasoline tested in that program.

Arco says each of the four test fuels has significant reductions of aromatics, olefins, sulfur and Reid vapor pressure (volatility), and contains 15% (by volume) of MTBE (methyl tertiary butyl ether).

Arco introduced its first reformulated, cleaner-burning gasoline, EC-1 Regular, in September 1989, and a 92-octane EC Premium in September 1990, both in southern California only.

At a press conference in Los Angeles in January, Arco also announced reaching a milestone of 100-million pounds of pollutants removed from the air through use of its EC gasolines. Arco unveiled a 10-ft.-high digital sign atop its downtown headquarters building that will count down the

foreseeable future."

Natural gas would not enhance national security or be cheaper, Arco officials explained. Some 75% of the world's reserves of natural gas are located in the Organization of Petroleum Exporting Countries (OPEC) and Eastern Bloc nations. "If a large-scale U.S. market were to develop for natural gas-based alternative fuels, cheap foreign gas would rise in price," Arco explained. "It seems to us that OPEC would manipulate the world markets in

Cost, Cleanliness of Alternative Fuels

	Added ¢ Gal. vs. Gasoline (1)	% Reduction in Pollutants (2)		
		Ozone from Nonmethane Organic Gases	Carbon Monoxide	Nitrogen Oxides
Reformulated Gasoline	15¢	30%	30%	nil
LPG	0	30	25-80	(3)
CNG	6-23	65	50-95	Up to 100%
Methanol (M85)	25-40	30	0-30	15-0
Electricity	200	99	99	91

Source: Arco Products Co.

(1) Energy equivalent compared with conventional gasoline.

(2) For 1989-model vehicles.

(3) Between CNG and gasoline.

next 100-million pounds eliminated by EC gasolines.

In an analysis of economic and national security aspects of alternative fuels, Arco concluded, "For the bulk of the nation's light-duty vehicles, we believe that reformulated gasoline is the only practical alternative to conventional gasoline for the

both oil and gas to maximize its own total revenues."

Arco says, "By manufacturing gasoline domestically, the nation is not as dependent on raw-material imports and finished-product imports as it would be with large-scale use of alternative fuels from natural gas."

(Continued from page 23)

Secretary of Energy should take. Executives involved in this level might not be able to respond fully because of antitrust and other laws, NPC said.

• Level 3, for severe national security emergencies such as military mobilization, war, or similar hostilities. A petroleum "National Defense Executive Reserve" (NDER), designated and trained in advance, would be called to active duty. These reserves would assist the DOE in the management of emergency programs adopted by DOE, and direct, where necessary, activities of the oil industry to ensure that supplies meet the nation's essential military and civilian requirements. NPC explained that an NDER organization

should consist of fewer than 50 positions, and should rely on the petroleum industry to operate under competitive free-market conditions.

NDER is an existing government-wide program, but no NDER exists for petroleum production, distribution, refining and marketing. The main reason is that the creation and function of such a unit under existing antitrust and conflict-of-interest laws is severely restricted, NPC said.

For example, petroleum reservists must disassociate themselves from their companies during activation, divest themselves of all energy-related financial holdings and restrict the functions that they can perform upon their return to the

private sector.

Level 3 should be used only in extreme circumstances, such as if the Persian Gulf war cuts oil exports 50%, NPC said, and then only if laws were changed to make serving in the NDER less onerous. Under NPC scenarios, Level 3 would have been used in World War II and the Korean War (see box on page 23).

Serious potential events that NPC believes should not (repeat not) entail activation of a petroleum NDER are if a foreign terrorist nation detonates a nuclear weapon in the United States and threatens more; or an 8.7 earthquake occurs damaging all energy facilities in an area bounded by Kansas City, Chicago, Pittsburgh, Atlanta and Vicksburg.

POS Moves into Next Generation

Replacement and equipment upgrades mark the latest developments in oil company point-of-sale (POS). Customer demand for faster and more efficient electronic payment systems has thrust the majors into a second generation of POS station hardware.

Since the POS revolution began in the early to mid-'80s, major oil companies, independents and larger jobberships have developed a solid track record with their electronic hardware. As a result, they have long since dispelled "future shock" fears and are exploring and implementing even more advanced POS applications.

Advances in electronic processing, along with the majors' growing desire to increase overall automation of their stations, are slowly altering the shape of POS, pushing the frontiers of applications beyond credit card authorization and debit processing. Space-age developments such as satellite transmissions are very much a part of this reshaping process.

Most if not all of the major oil companies report continual upgrades on equipment, with at least three—Citgo, Mobil and Shell—having replaced their old POS devices with new ones.

During the past two years, petroleum marketers have also been making the transition with newer and more sophisticated POS systems. Other marketers, however, are still researching their POS alternatives. These marketers are examining their suppliers' programs, weighing cost factors and potential benefits. For some marketers, the decision may be whether to brand currently unbranded outlets in order to get onto a POS program.

The new systems the majors have been installing generally have expanded memory and increased capability. The computers in the new generation stretch beyond what oil companies initially intended; namely, to process credit transactions and capture data electronically.

Referring to the need for more memory within its onsite POS terminals, one Citgo spokesman says, "There's only so many things you can put in a closet before you have to build a bigger closet."

Meanwhile, news on other POS fronts appears to be following a path already foreseen by some industry observers.

● Along with the second generation of equipment comes changes in credit card policies, as one-tier pricing spreads across the industry and more majors scuttle discount-for-cash programs.

● While more majors are getting into debit, this option continues its holding pattern in the minds of many major oil companies.

● Development to hasten electronic transactions through radio and satellite waves appears to be progressing steadily, according to industry observers.

POS evolution

Not only is POS technology changing, but so are the definitions.

Past issues of *NPN* have sought to focus the definition of POS on the functions of credit and debit card authorization. But terminal manufacturers and oil company officials now talk of POS more in terms of the entire station management system, of which credit/debit functions are merely a component.

Other terms, such as "leased line" and "dial up," which describe the phone line methods by which information from the station is transmitted, may have to be modified as radio waves and satellite beams prove cheaper and become more the norm.

Still, despite the expanding terminology, oil companies appear to be settling on POS equipment that will carry them through the early '90s, and in some cases, beyond.

Expanded memory

The key factor in much of the new POS equipment being installed by the majors is increased memory.

An official with Citgo, for example, says the company had "maxed out" the memory of its existing VeriFone Zon terminals and moved to VeriFone's Zon II XP model, which has just about double the "RAM" or computer memory.

"There were many [additional features] we intended to put into the terminal," says Tom Oare, manager of POS for Citgo. Oare says the latest plan was to add check



The new systems the majors have been installing have expanded memory and increased capability.

authorization to the company's POS capabilities.

"But even check authorization required more memory. We maxed out the terminal. It just did not have sufficient memory," Oare says.

Citgo, which started its POS program back in 1986, has roughly 7,900 branded outlets on POS. Only 15 of those locations are salary operated, with the rest being jobber locations.

The company handles its electronic transactions through JC Penney's Business Services Inc. and Bypass The System.

Citgo, like many other oil companies, has been very active in POS for quite some time. And the equipment it has been using has paid for itself many times over, company officials says, making the time ripe for upgrading its hardware.

Among the many POS options that oil companies are seriously considering are the inclusion of electronic mail, new communication methods, fleet fueling, debit and the ability to be reprogrammed, sources say. And terminals made between 1983-'86 were simply not designed for these functions.

POS in the pump

Another factor involved in shaping the look of POS terminals is customer convenience. The majors have found much



By Angel Abcede
Staff Reporter

success with the POS terminal situated right in the pump. The device allows customers to use their credit cards without having to go into the convenience store to pay. An oil company spokesman says the option is especially good for parents who would ordinarily have to leave their children unattended in the car while they went in to pay for gasoline.

The equipment is costly—in the range of \$6,000-\$7,500 per pump—but oil companies figure the tradeoff in terms of increased credit sales and customer convenience is worth it.

Typically the in-pump terminals have visual display screens that direct a customer through the transaction. The terminals operate much like automatic teller machines (ATMs) at banks, with a similar configuration of key pad, screen and card swipe.

Gilbarco's Card Reader In Dispenser (CRIND) is one such model. The device operates just like any other POS terminal and can be retrofitted into other Gilbarco pumps. CRIND's price lists between \$6,000-\$6,500 per terminal, with retrofits running a bit more at between \$6,500-\$7,500 depending on age. Ken Marion, product line manager for Gilbarco, says the price has remained the same for the past two years.

Major companies have responded well to the devices, Marion says. In total, Gilbarco has over 1,000 CRINDs up and running today with a majority of them at major oil outlets. "We're seeing anywhere between 50-90% new pump orders with CRINDs," Marion reports. "The concept really has arrived. The majors have fine-tuned customer interfaces and they see the

advantages of faster throughput and increased convenience [for customers]."

Most of the technology along this avenue comes from the pump manufacturers. Since the pump technology belongs to companies such as Gilbarco and Dresser Wayne, many third-party POS manufacturers find themselves locked out.

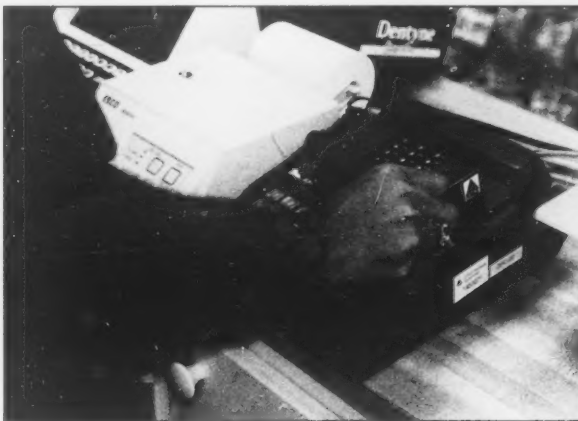
"We know the protocol [within our pumps]" says Tom Collins, marketing manager for Wayne Division, Dresser Industries. "A third party would find it difficult to engineer [a POS terminal in the pump] without our input."

Third-party involvement in the technology could only come about with an agreement between a pump manufacturer such as Wayne and a POS terminal maker. Collins reports no such overtures from third-party companies are aimed at Wayne.

Diebold, a company known for its ATMs, has been in the petroleum POS market since 1984. And while Diebold admits they are not pump makers and don't have access to in-pump POS technology, they "don't see it as a problem."

LuAnn Ucker, product manager for Diebold, says, "We see the latest trend to POS terminals in the pump opening up a market for us. There's a lot of cost consciousness out there...[many marketers] can't afford to redo their pumps or don't want to spend the money. We don't see that segment of the market going away."

Ucker says that depending on the features, Diebold terminals, which can control up to 24 fueling sites, can range between \$5,000-\$7,000.



The majors' attempts to solicit more marketers to invest in POS equipment is fueling the development of inexpensive, low-end devices.

The system and controller needed to give the marketer a complete package would cost an additional \$10,000. Prices appear to fall in line with in-pump terminals, but when considering how a single Diebold terminal can operate an entire site, costs can be cut.

Diebold has roughly 800 units operating in the United States and another 400-450 in Canada, Ucker says.

"We've seen a monumental explosion in island automation," Ucker says. "Everyone wants to get on the bandwagon."

Still, despite all the official optimism, sources within the company do admit that advances in petroleum POS are not an emphasis with Diebold. Without further explanation, the source says the company presently intends to stay with its current models and does not intend to bring out new lines.

Wayne put its first POS pump on the street back in 1985, Collins says, and has since developed an entire management system for the gasoline/C-store outlet.

Shell has taken on the Wayne Plus/3 system at 245 locations. The system integrates gasoline dispenser control, electronic cash register functions and credit card processing in one countertop device.

Wayne officials say the system is "fully interactive" with Shell's credit card processing network.

The Wayne Plus/3 console takes up about 1.5-sq.ft. of counter space and controls the fuel and C-store operations. It features customer terminals at the pump as well.

Tokheim's card reader in the pump is similar to other pump manufacturers in its visual design. POS terminals are on both sides of the pump and list price for a single terminal is in the competitive range of \$6,000, the company says.

Russ Hamilton, POS manager for Tok-



In-pump POS devices that offer customers cash or credit options also provide instructions from a two-line screen guiding customers through the credit transaction.

heim, says 80% of their major oil company clients are either testing or actually rolling out programs with the terminal, a clear sign of a catching trend, he believes.

On a related note, Hamilton mentioned the latest thoughts on next-generation terminals involve cash accepters in the pump. The concept would open up the convenience of paying at the pump to customers who want to pay cash. But issues of security still have to be resolved, Hamilton says. "There is the danger of theft, but certainly con-

venience is going to drive [development of the technology]," Hamilton says.

Ucker of Diebold says her company does offer a terminal that accepts cash, so the technology does exist among third-party vendors. Ucker does, however,

recommend the cash-accepting devices be used at attended locations. At unattended outlets, the temptation to break into the POS terminal is greater, she says. But she adds that the firm has not had problems with vandalism of their equipment.

Getty Expands Its Second-Generation POS

East Coast marketer Getty Petroleum continues the rollout of its modified "Fleetminder" POS units, anticipating 70 locations up and running by the end of the year.

Having begun its POS program in the mid-1980s, Getty described the modifications as "software and hardware" upgrades designed to "increase the ease of use and durability of the unit," the company says.

Officials say 400 units will be in use by 1995.

Similar to a bank automatic teller machine (ATM), Getty's island card reader has a card swipe, key pad and display screen. The card reader controls the entire pump is-

Where The Oil Companies Stand With POS Equipment

Company	No. of POS Terminals (Salaried)	No. of POS Terminals (Incl. Jobber)	Current POS Terminal Model	Previous POS Terminal Model
American	170	3,000	N/A Petrofina	N/A
Amoco	3,000+	3,150	Micromax Schlumberger Pinstrip VeriFone	same
Arco	2,000	N/A	N/A	N/A
Atlantic	N/A	600	N/A	N/A
Chevron	50	3,800	Wayne Plus/3; Schlumberger Micromax 3000; Techlink; VeriFone	NCR
Citgo	15	7,800	VeriFone Zon II XP	VeriFone Zon
Exxon	5,500	N/A	VeriFone; Techlink; Gilbarco Suntronic	
Getty	70	N/A		
Mobil	3,680	N/A	Datacard 840 Datacard 360	Datrol 3205
Phillips	280	2,600	Suntronic 960; NCR 2157; VeriFone Zon II XP; Taltek 727; Datatrol 440	
Sheli	2,420	N/A	Wayne; Gilbarco	
Sunoco	N/A	2,700	N/A	N/A
Texaco*	N/A	14,000	N/A	N/A

Notes: N/A=Not available

*Numbers do not involve Star Enterprises



land, the company says.

Getty signed on with Suntronic Technology Group, Inc., back in 1989 for development of its POS terminal. Getty says Suntronic's software can be expanded and modified to meet its future needs.

Currently, the system handles Getty's fleet fueling card, Getty credit card, MasterCard, Visa and Discover cards.

Joseph Quinto (left), Getty's director of marketing, stands with Getty and Suntronic officials involved in the Northeast/Mid-Atlantic marketer's new rollout of second-generation POS equipment.



Customer convenience appears to be driving the major oil companies push toward in-pump POS terminals.

But cash accepters in the pump are still in the development stage. Currently, oil companies are investing in the proven idea of plastic cards and integrated pump devices.

Shell says it has 420 "integrated" systems from both Wayne and Gilbarco and an additional 2,000 direct locations with leased lines using VeriFone terminals. Shell intends to upgrade those facilities based on market conditions.

Mobil is also testing in-pump POS terminals, citing added customer convenience as one of the main factors in the test. Currently, Mobil has upgraded its POS terminals from Datatrol 3205 models to Datacard 8404. The first oil company to get into POS in a big way in the early 1980s, Mobil has a total of 3,680 terminals today, all of which accept bank debit cards.

Jobber POS

Petroleum marketers, too, have been riding the wave of major oil development in POS. While many report smooth transitions into supplier programs, others find their suppliers demand high monthly fees and are clumsy with their POS delivery.

Still, many marketers are satisfied with their POS programs. Bob Anderson of Twin Lakes Petroleum in Athens, Texas, says the POS system he has through Exxon has been performing well. His stations use a dial-up line that can process bank cards in roughly 20-30 seconds. Anderson says that at busy moments it creates somewhat of a traffic jam, but overall the system works well.

With the system in place for about two years, Anderson sees one of the primary benefits as being able to get his money from credit sales quickly.

Other marketers agree. Joe Burress of Burress Oil Co., Inc., Paris, Texas, says that despite the added expenses that a marketer may take on with POS, electronic credit is a valuable service simply because money from credit sales comes in faster.

Burress just completed a POS cost assessment of one of his unbranded locations and is deciding whether to brand the location in order to get the outlet onto a POS program.

When considering monthly fees at about \$65/mo. or buying the equipment for \$600-\$700, Burress says a location would have to do between 40,000-50,000 gal./mo. to make the switchover worthwhile.

Beyond the dollars and cents, Burress calls the decision to switch a judgement call marketers must make for the convenience of electronic payment.

For some marketers, it's a matter of how on the ball their supplier is with their marketer POS programs. Monthly fees, hardware and software vary from supplier to supplier, and how successfully a major can transfer the POS know-how to the jobber is a pivotal issue.

Jim McGuire of McGuire Oil Co. in Mobile, Ala., says

that of his three suppliers, Citgo appears to have the best package.

With the VeriFone package, McGuire pays Citgo \$25 mo. per location and has typical transaction times of 10-12 seconds. One of his other suppliers charges \$90 mo. or gives McGuire the option of buying the equipment at \$1,200. But in buying the equipment, a marketer runs the risk of the hardware becoming obsolete, he adds. In addition, McGuire says the setup time and backup are not as good as Citgo's.

McGuire's third supplier is having problems with its software. Transaction times can run as long as a minute—an excruciating waiting period for a customer wanting to fill up his or her fuel tank and go. On top of that, the oil company charges \$80-\$90 mo. for the program.

"The key is for the oil company to offer a POS program that is inexpensive and that has the capability of being updated."

Two fronts

Observers see the major oil company POS activity expanding in two primary areas: high-end integrated systems and low-end card-swipe devices.

Jonathan Briggs, a pioneer in Mobil's early push into POS and who is now with VeriFone, says, "Personally, I see growth at both ends of the [POS] spectrum." At one end, he foresees lower-cost equipment—even lower than what marketers have traditionally seen—and at the other end more integration of all station electronic functions.

Briggs defines integration as the card-reading pumps tied into a central in-store control. "The only practical way to make all that work is to have a central site control device that...keeps all those transac-



A closeup of a Tokheim keypad and display screen reveals the latest development in POS terminals.



Customers using credit cards are seeing more and more oil companies drop two-tier pricing in favor of same price for cash or credit policies.

tions straight," Briggs explains.

Pump manufacturers making these integrated systems are also coming up with in-store machines that will fuse the tasks of C-store retailing, pump control and credit transactions.

On the low-cost end of the POS spectrum, major oil companies are asking their branded marketer stations to sign onto their networks, Briggs says. Oil companies are looking to get rid of the paper processing and get POS down into the lower-volume stations, he says.

Higher-volume marketers are already on POS, Briggs asserts. Now the majors are searching for solutions to offer the lower-volume stations at a price they can afford.

At present, marketers must sacrifice certain features, such as quick processing times, to get an affordable system.

"In order to sell into that segment, it's going to require machines with fairly robust features, yet at a price point that is lower than what we've been used to seeing," Briggs says.

Credit, debit changes

As trends in equipment unfold, so too do developments in the debit and credit fields. Same price for cash or credit policies appear to be spreading as Chevron continues implementation of its program and Texaco, to a limited extent, announces a switch to same price in the Midcontinental states.

At the same time, debit seems to be maintaining a holding pattern among major oil companies. Companies like Citgo and Phillips are cautiously joining in with test programs, but very little else is happening.

On the credit front, Texaco talked with NPN earlier this month about its one-tier cash or credit policy that it says will begin in its eight-state Midcontinental region.

one Texaco spokesman, adding that the initial motivation for the switch was consumer demand for the policy.

A spokesman at Chevron says its switch to single-tier pricing was also customer driven. Their stations on the West Coast are already on such a policy. Now Chevron is in the process of implementing the program east of the Rockies, the company says.

So far, says a Texaco spokesman, both motorist and marketer reaction have been favorable.

Marketers with retail outlets may look at the change in a positive light, says one Southern marketer.

He says marketers generally viewed the credit price as 3¢ more the marketer had to give back to the oil company. As a result, the marketer would post street prices that much higher to compensate for what he had to pay back to the supplier.

The move to single-tier pricing will hopefully mean less hassles all around, he says.

In the debit area, the mood among the oil companies continues to be one of caution.

Phillips has less than a dozen locations accepting debit in a test mode, and company officials don't foresee any big jumps into accepting bank cash cards in the near future.

As with other oil companies, credit appears to be the major thrust of Phillips' program. The Bartlesville, Okla.-based supplier has roughly 2,900 stations on its POS network, with about 280 of those being salary-operated units.

F.D. Mallow, director of station automation for Phillips says the oil companies, with the advent of the convenience store boom, are becoming retail merchants. "It's going to be more economical for business to handle credit [electronically]," Mallow says.

The test involves about 450 outlets in Oklahoma, Kansas, Missouri, New Mexico, Nebraska, Colorado, west Texas and central Arkansas.

Marketers in those states will have the option of whether to participate.

"Our long-term goal is 100% customer satisfaction," says

Citgo is also conducting a debit test in Nevada in the first quarter of this year, the company says. But like Phillips, Citgo officials expressed an overall caution about the payment alternative.

Oare says Citgo will approach debit on a state-by-state basis, using the Nevada test as a guide. Oare adds, "[In areas] where debit is proven to be a critical form of payment, Citgo says it will strongly consider including that option in their POS offering."

Communications, too

New developments in communication technology may be the next POS venture oil companies undertake.

Oil companies interested in quick authorization at a reasonable price are looking into the alternative of satellite transmissions. Observers say the technology exists today and that further development of equipment to access the science is ongoing.

One example of such a satellite service comes from a company called Merchant-Tech International, which offers an instant credit card authorization and data broadcast system for C-stores.

According to Atlanta-based Merchant-Tech, the system can authorize a transaction in a quarter of a second, much faster than many dial-up lines that take as much as 20-30 seconds. The key is a negative file within the terminal itself that is updated overnight by satellite transmissions. The space age technology is not "on-line," but provides terminals with fresh credit information on a daily basis.

The system bypasses phone lines altogether, and could bring POS into its next phase of development—an increased use of satellite and radiowave technology.

Some companies are also reported to be testing communications programs such as price notification for jobber customers via satellite transmission.

Briggs of VeriFone says research into satellite and radio wave data transmission is continuing, with new equipment being developed to handle the communication option. He expects the search for less costly communications will continue.

Companies will more than likely conduct pilot tests in '91, broadcasting negative files using the new technology, Briggs predicts.

In the end, Briggs sees a combination of technologies being used by the major oil companies. He explains that there will never be a single "universal solution" to point-of-sale.

"People may get disgruntled at the phone bill, but I don't see a mass departure from that technology," Briggs says, adding that oil companies are going to see more tests of technology alternatives in the future.

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